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20557A US Sequence Listing as filed  
SEQUENCE LISTING

<110> Warner-Lambert Co. LLC  
Baron, Scott  
Hidayetoglu, Debra  
Johns, Margaret  
Offord, James  
Su, T-Zhi  
Su, Ti-Zhi

<120> ANIMALS AND CELLS CONTAINING A MUTATED a2/d1 GENE

<130> PC20557 PCT

<150> 60/518,110  
<151> 2003-11-07

<150> 60/462,634  
<151> 2003-04-14

<160> 31

<170> PatentIn version 3.1

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20557A US Sequence Listing as filed

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## 20557A US Sequence Listing as filed

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## 20557A US Sequence Listing as filed

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22

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21

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20557A US Sequence Listing as filed

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<212> PRT  
<213> Mus musculus

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<212> PRT  
<213> Mus musculus

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<210> 19  
<211> 74  
<212> PRT  
<213> Mus musculus

<400> 19

Ala Ser Pro Trp Val Asp Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu  
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Tyr Asp Val Arg Arg Ala Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro  
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Lys Asp Met Leu Ile Leu Val Asn Val Ser Gly Ser Val Ser Gly Leu  
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Thr Leu Lys Leu Ile Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu  
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Ser Asp Asp Asp Phe Val Asn Val Ala Ser  
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## 20557A US Sequence Listing as filed

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&lt;213&gt; Mus musculus

&lt;400&gt; 20

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&lt;210&gt; 21

&lt;211&gt; 2492

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;400&gt; 21

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<212> DNA  
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<210> 23  
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<212> DNA  
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<213> Mus musculus

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<211> 1103

<212> PRT

<213> Mus musculus

<400> 25

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35 40 45

Lys Thr Ala Ser Gly Val Thr Gln Leu Ala Asp Ile Tyr Glu Lys Tyr  
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
85 90 95

Leu Val Arg Leu Ala Met Glu Ala Glu Lys Val Gln Ala Ala His Gln  
100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
115 120 125

Asp Asp Leu Asp Pro Glu Arg Asn Glu Ser Glu Pro Gly Ser Gln Arg  
130 135 140

Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser  
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
180 185 190

Phe Lys Arg Asn Arg Asp Glu Asp Pro Thr Leu Leu Trp Gln Val Phe  
195 200 205

Gly Ser Ala Thr Gly Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val  
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245 250 255

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile  
260 265 270

Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe  
275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe  
290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp  
305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly  
325 330 335

Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala  
340 345 350

Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg  
355 360 365

Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val  
370 375 380

Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln  
385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile  
405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg  
420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn  
435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu  
450 455 460

Pro Val Phe Asn Val Thr Gly Gln Ser Glu Asn Lys Thr Asn Leu Lys  
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Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp  
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Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln  
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Pro Lys Pro Ile Gly Val Gly Ile Pro Thr Ile Asn Leu Arg Lys Arg  
530 535 540

Arg Pro Asn Val Gln Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp  
545 550 555 560

Phe Leu Asp Ala Glu Leu Glu Asn Glu Ile Lys Val Glu Ile Arg Asn  
565 570 575

Lys Met Ile Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val  
580 585 590

Lys Ser Gln Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr  
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Trp Thr Pro Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro  
610 615 620

Thr Tyr Ser Phe Tyr Tyr Ile Lys Ala Lys Leu Glu Glu Thr Ile Thr  
625 630 635 640

Gln Ala Arg Tyr Ser Glu Thr Leu Lys Pro Asp Asn Phe Glu Glu Ser  
645 650 655

Gly Tyr Thr Phe Ile Ala Pro Arg Glu Tyr Cys Asn Asp Leu Lys Pro  
660 665 670

Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn Glu Phe Ile Asp  
675 680 685

Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp Leu Ile Asn Arg  
690 695 700

Ile Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val Gln Asn Tyr Trp  
705 710 715 720

Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg Phe Val Val Thr  
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20557A US Sequence Listing as filed

725

730

735

Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala Gly Glu Asn Trp  
740 745 750

Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr Lys Arg Ser Leu  
755 760 765

Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe Asn Lys Ser Gly  
770 775 780

Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys Ala Val Glu Leu  
785 790 795 800

Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val Gly Ile Lys Ile  
805 810 815

Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr Ser Ile Arg Asp  
820 825 830

Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn Ser Asp Val Met  
835 840 845

Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu Met Ala Asn His  
850 855 860

Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly Glu Ile Asp Pro  
865 870 875 880

Ser Met Met Arg His Leu Val Asn Ile Ser Leu Tyr Ala Phe Asn Lys  
885 890 895

Ser Tyr Asp Tyr Gln Ser Val Cys Asp Pro Gly Ala Ala Pro Lys Gln  
900 905 910

Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile Ala Asp Ile Leu  
915 920 925

Gln Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser Ile Leu Gln Gln  
930 935 940

Leu Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu Ala Val Glu Met  
945 950 955 960

Glu Glu Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln Ser Cys Ile Thr  
965 970 975

20557A US Sequence Listing as filed  
Glu Gln Thr Gln Tyr Phe Phe Lys Asn Asp Thr Lys Ser Phe Ser Gly  
980 985 990

Leu Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His Val Glu Lys Leu  
995 1000 1005

Met Asn Thr Asn Leu Val Phe Ile Met Val Glu Ser Lys Gly Thr  
1010 1015 1020

Cys Pro Cys Asp Thr Arg Leu Leu Met Gln Ala Glu Gln Thr Ser  
1025 1030 1035

Asp Gly Pro Asp Pro Cys Asp Met Val Lys Gln Pro Arg Tyr Arg  
1040 1045 1050

Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Val Leu Glu Asp Tyr  
1055 1060 1065

Thr Asp Cys Gly Gly Val Ser Gly Leu Asn Pro Ser Leu Trp Ser  
1070 1075 1080

Ile Phe Gly Leu Gln Phe Ile Leu Leu Trp Leu Val Ser Gly Ser  
1085 1090 1095

Arg His Tyr Leu Leu  
1100

<210> 26  
<211> 1091  
<212> PRT  
<213> Mus musculus

<400> 26

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser  
1 5 10 15

Gly Leu Ile Gly Pro Ser Ser Glu Glu Pro Phe Pro Ser Pro Val Thr  
20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala  
35 40 45

Lys Thr Ala Ser Gly Val Thr Gln Leu Ala Asp Ile Tyr Glu Lys Tyr  
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65 70 75 80

20557A US Sequence Listing as filed

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
85 90 95

Leu Val Arg Leu Ala Met Glu Ala Glu Lys Val Gln Ala Ala His Gln  
100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
115 120 125

Asp Asp Leu Asp Pro Glu Arg Asn Glu Ser Glu Pro Gly Ser Gln Arg  
130 135 140

Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser  
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
180 185 190

Phe Lys Arg Asn Arg Asp Glu Asp Pro Thr Leu Leu Trp Gln Val Phe  
195 200 205

Gly Ser Ala Thr Gly Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val  
210 215 220

Asp Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu Tyr Asp Val Arg Arg  
225 230 235 240

Arg Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile  
245 250 255

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile  
260 265 270

Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe  
275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe  
290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp  
305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly  
325 330 335

20557A US Sequence Listing as filed

Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala  
340 345 350

Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg  
355 360 365

Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val  
370 375 380

Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln  
385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile  
405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg  
420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn  
435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu  
450 455 460

Pro Val Phe Asn Val Thr Gly Gln Ser Glu Asn Lys Thr Asn Leu Lys  
465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp  
485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr  
500 505 510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln  
515 520 525

Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp  
530 535 540

Ala Glu Leu Glu Asn Glu Ile Lys Val Glu Ile Arg Asn Lys Met Ile  
545 550 555 560

Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln  
565 570 575

Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro  
580 585 590

20557A US Sequence Listing as filed

Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser  
595 600 605

Phe Tyr Tyr Ile Lys Ala Lys Leu Glu Glu Thr Ile Thr Gln Ala Arg  
610 615 620

Ser Lys Lys Gly Lys Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn  
625 630 635 640

Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Glu Tyr Cys Asn  
645 650 655

Asp Leu Lys Pro Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn  
660 665 670

Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp  
675 680 685

Leu Ile Asn Arg Ile Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val  
690 695 700

Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg  
705 710 715 720

Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala  
725 730 735

Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr  
740 745 750

Lys Arg Ser Leu Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe  
755 760 765

Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys  
770 775 780

Ala Val Glu Leu Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val  
785 790 795 800

Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr  
805 810 815

Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn  
820 825 830

Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu  
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835

20557A US Sequence Listing as filed  
840  
845Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly  
850 855 860Glu Ile Asp Pro Ser Met Met Arg His Leu Val Asn Ile Ser Leu Tyr  
865 870 875 880Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Asp Pro Gly Ala  
885 890 895Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile  
900 905 910Ala Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala Ala Trp Ser  
915 920 925Ile Leu Gln Gln Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu  
930 935 940Ala Val Glu Met Glu Glu Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln  
945 950 955 960Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Lys Asn Asp Thr Lys  
965 970 975Ser Phe Ser Gly Leu Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His  
980 985 990Val Glu Lys Leu Met Asn Thr Asn Leu Val Phe Ile Met Val Glu Ser  
995 1000 1005Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Met Gln Ala Glu  
1010 1015 1020Gln Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val Lys Gln Pro  
1025 1030 1035Arg Tyr Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Val Leu  
1040 1045 1050Glu Asp Tyr Thr Asp Cys Gly Gly Val Ser Gly Leu Asn Pro Ser  
1055 1060 1065Leu Trp Ser Ile Phe Gly Leu Gln Phe Ile Leu Leu Trp Leu Val  
1070 1075 1080

20557A US Sequence Listing as filed  
Ser Gly Ser Arg His Tyr Leu Leu  
1085 1090

<210> 27

<211> 1086

<212> PRT

<213> Mus musculus

<400> 27

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser  
1 5 10 15

Gly Leu Ile Gly Pro Ser Ser Glu Glu Pro Phe Pro Ser Pro Val Thr  
20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala  
35 40 45

Lys Thr Ala Ser Gly Val Thr Gln Leu Ala Asp Ile Tyr Glu Lys Tyr  
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
85 90 95

Leu Val Arg Leu Ala Met Glu Ala Glu Lys Val Gln Ala Ala His Gln  
100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
115 120 125

Asp Asp Leu Asp Pro Glu Arg Asn Glu Ser Glu Pro Gly Ser Gln Arg  
130 135 140

Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser  
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
180 185 190

Phe Lys Arg Asn Arg Asp Glu Asp Pro Thr Leu Leu Trp Gln Val Phe  
195 200 205

20557A US Sequence Listing as filed

Gly Ser Ala Thr Gly Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val  
210 215 220

Asp Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu Tyr Asp Val Arg Arg  
225 230 235 240

Arg Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile  
245 250 255

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile  
260 265 270

Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe  
275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe  
290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp  
305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly  
325 330 335

Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala  
340 345 350

Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg  
355 360 365

Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val  
370 375 380

Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln  
385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile  
405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg  
420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn  
435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu  
450 455 460

20557A US Sequence Listing as filed

Pro Val Phe Asn Val Thr Gly Gln Ser Glu Asn Lys Thr Asn Leu Lys  
465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp  
485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr  
500 505 510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln  
515 520 525

Pro Lys Glu Pro Val Thr Leu Asp Phe Leu Asp Ala Glu Leu Glu Asn  
530 535 540

Glu Ile Lys Val Glu Ile Arg Asn Lys Met Ile Asp Gly Glu Ser Gly  
545 550 555 560

Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln Asp Glu Arg Tyr Ile  
565 570 575

Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro Val Asn Gly Thr Asp  
580 585 590

Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser Phe Tyr Tyr Ile Lys  
595 600 605

Ala Lys Leu Glu Glu Thr Ile Thr Gln Ala Arg Ser Lys Lys Gly Lys  
610 615 620

Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn Phe Glu Glu Ser Gly  
625 630 635 640

Tyr Thr Phe Ile Ala Pro Arg Glu Tyr Cys Asn Asp Leu Lys Pro Ser  
645 650 655

Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn Glu Phe Ile Asp Arg  
660 665 670

Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp Leu Ile Asn Arg Ile  
675 680 685

Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val Gln Asn Tyr Trp Ser  
690 695 700

Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg Phe Val Val Thr Asp  
705 710 715 720

20557A US Sequence Listing as filed

Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala Gly Glu Asn Trp Gln  
725 730 735

Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr Lys Arg Ser Leu Asp  
740 745 750

Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe Asn Lys Ser Gly Pro  
755 760 765

Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys Ala Val Glu Leu Tyr  
770 775 780

Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val Gly Ile Lys Ile Asp  
785 790 795 800

Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr Ser Ile Arg Asp Pro  
805 810 815

Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn Ser Asp Val Met Asp  
820 825 830

Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu Met Ala Asn His Asp  
835 840 845

Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly Glu Ile Asp Pro Ser  
850 855 860

Met Met Arg His Leu Val Asn Ile Ser Leu Tyr Ala Phe Asn Lys Ser  
865 870 875 880

Tyr Asp Tyr Gln Ser Val Cys Asp Pro Gly Ala Ala Pro Lys Gln Gly  
885 890 895

Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile Ala Asp Ile Leu Gln  
900 905 910

Ile Gly Trp Trp Ala Thr Ala Ala Trp Ser Ile Leu Gln Gln Leu  
915 920 925

Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu Ala Val Glu Met Glu  
930 935 940

Glu Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln Ser Cys Ile Thr Glu  
945 950 955 960

Gln Thr Gln Tyr Phe Phe Lys Asn Asp Thr Lys Ser Phe Ser Gly Leu  
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965                    20557A US Sequence Listing as filed  
970                    975

Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His Val Glu Lys Leu Met  
980                    985                    990

Asn Thr Asn Leu Val Phe Ile Met Val Glu Ser Lys Gly Thr Cys Pro  
995                    1000                    1005

Cys Asp Thr Arg Leu Leu Met Gln Ala Glu Gln Thr Ser Asp Gly  
1010                    1015                    1020

Pro Asp Pro Cys Asp Met Val Lys Gln Pro Arg Tyr Arg Lys Gly  
1025                    1030                    1035

Pro Asp Val Cys Phe Asp Asn Asn Val Leu Glu Asp Tyr Thr Asp  
1040                    1045                    1050

Cys Gly Gly Val Ser Gly Leu Asn Pro Ser Leu Trp Ser Ile Phe  
1055                    1060                    1065

Gly Leu Gln Phe Ile Leu Leu Trp Leu Val Ser Gly Ser Arg His  
1070                    1075                    1080

Tyr Leu Leu  
1085

<210> 28  
<211> 1079  
<212> PRT  
<213> Mus musculus  
  
<400> 28

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser  
1                    5                            10                    15

Gly Leu Ile Gly Pro Ser Ser Glu Glu Pro Phe Pro Ser Pro Val Thr  
20                    25                            30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala  
35                    40                            45

Lys Thr Ala Ser Gly Val Thr Gln Leu Ala Asp Ile Tyr Glu Lys Tyr  
50                    55                            60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65                    70                            75                    80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
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## 20557A US Sequence Listing as filed

85

90

95

Leu Val Arg Leu Ala Met Glu Ala Glu Lys Val Gln Ala Ala His Gln  
 100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
 115 120 125

Asp Asp Leu Asp Pro Glu Arg Asn Glu Ser Glu Pro Gly Ser Gln Arg  
 130 135 140

Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser  
 145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
 165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
 180 185 190

Phe Lys Arg Asn Arg Asp Glu Asp Pro Thr Leu Leu Trp Gln Val Phe  
 195 200 205

Gly Ser Ala Thr Gly Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val  
 210 215 220

Asp Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu Tyr Asp Val Arg Arg  
 225 230 235 240

Arg Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile  
 245 250 255

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile  
 260 265 270

Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe  
 275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe  
 290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp  
 305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly  
 325 330 335

20557A US Sequence Listing as filed

Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala  
340 345 350

Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg  
355 360 365

Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val  
370 375 380

Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln  
385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile  
405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg  
420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn  
435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu  
450 455 460

Pro Val Phe Asn Val Thr Gly Gln Ser Glu Asn Lys Thr Asn Leu Lys  
465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp  
485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr  
500 505 510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln  
515 520 525

Pro Lys Glu Pro Val Thr Leu Asp Phe Leu Asp Ala Glu Leu Glu Asn  
530 535 540

Glu Ile Lys Val Glu Ile Arg Asn Lys Met Ile Asp Gly Glu Ser Gly  
545 550 555 560

Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln Asp Glu Arg Tyr Ile  
565 570 575

Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro Val Asn Gly Thr Asp  
580 585 590

20557A US Sequence Listing as filed

Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser Phe Tyr Tyr Ile Lys  
595 600 605

Ala Lys Leu Glu Glu Thr Ile Thr Gln Ala Arg Tyr Ser Glu Thr Leu  
610 615 620

Lys Pro Asp Asn Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg  
625 630 635 640

Glu Tyr Cys Asn Asp Leu Lys Pro Ser Asp Asn Asn Thr Glu Phe Leu  
645 650 655

Leu Asn Phe Asn Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser  
660 665 670

Cys Asn Thr Asp Leu Ile Asn Arg Ile Leu Leu Asp Ala Gly Phe Thr  
675 680 685

Asn Glu Leu Val Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly  
690 695 700

Val Lys Ala Arg Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr  
705 710 715 720

Pro Lys Glu Ala Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu  
725 730 735

Asp Ser Phe Tyr Lys Arg Ser Leu Asp Asn Asn Tyr Val Phe Thr  
740 745 750

Ala Pro Tyr Phe Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile  
755 760 765

Met Val Ser Lys Ala Val Glu Leu Tyr Ile Gln Gly Lys Leu Leu Lys  
770 775 780

Pro Ala Val Val Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn  
785 790 795 800

Phe Thr Lys Thr Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp  
805 810 815

Cys Lys Arg Asn Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly  
820 825 830 835

Gly Phe Leu Leu Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly  
840 845

20557A US Sequence Listing as filed

Arg Phe Phe Gly Glu Ile Asp Pro Ser Met Met Arg His Leu Val Asn  
850 855 860

Ile Ser Leu Tyr Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys  
865 870 875 880

Asp Pro Gly Ala Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr  
885 890 895

Val Pro Ser Ile Ala Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala  
900 905 910

Ala Ala Trp Ser Ile Leu Gln Gln Leu Leu Leu Ser Leu Thr Phe Pro  
915 920 925

Arg Leu Leu Glu Ala Val Glu Met Glu Glu Asp Asp Phe Thr Ala Ser  
930 935 940

Leu Ser Lys Gln Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Lys  
945 950 955 960

Asn Asp Thr Lys Ser Phe Ser Gly Leu Leu Asp Cys Gly Asn Cys Ser  
965 970 975

Arg Ile Phe His Val Glu Lys Leu Met Asn Thr Asn Leu Val Phe Ile  
980 985 990

Met Val Glu Ser Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Met  
995 1000 1005

Gln Ala Glu Gln Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val  
1010 1015 1020

Lys Gln Pro Arg Tyr Arg Lys Gly Pro Asp Val Cys Phe Asp Asn  
1025 1030 1035

Asn Val Leu Glu Asp Tyr Thr Asp Cys Gly Gly Val Ser Gly Leu  
1040 1045 1050

Asn Pro Ser Leu Trp Ser Ile Phe Gly Leu Gln Phe Ile Leu Leu  
1055 1060 1065

Trp Leu Val Ser Gly Ser Arg His Tyr Leu Leu  
1070 1075

20557A US Sequence Listing as filed

<211> 1084

<212> PRT

<213> Mus musculus

<400> 29

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser  
1 5 10 15

Gly Leu Ile Gly Pro Ser Ser Glu Glu Pro Phe Pro Ser Pro Val Thr  
20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala  
35 40 45

Lys Thr Ala Ser Gly Val Thr Gln Leu Ala Asp Ile Tyr Glu Lys Tyr  
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
85 90 95

Leu Val Arg Leu Ala Met Glu Ala Glu Lys Val Gln Ala Ala His Gln  
100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
115 120 125

Asp Asp Leu Asp Pro Glu Arg Asn Glu Ser Glu Pro Gly Ser Gln Arg  
130 135 140

Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser  
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
180 185 190

Phe Lys Arg Asn Arg Asp Glu Asp Pro Thr Leu Leu Trp Gln Val Phe  
195 200 205

Gly Ser Ala Thr Gly Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val  
210 215 220

Asp Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu Tyr Asp Val Arg Arg  
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225 230 20557A US Sequence Listing as filed  
235 240

Arg Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile  
245 250 255

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile  
260 265 270

Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe  
275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe  
290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp  
305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly  
325 330 335

Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala  
340 345 350

Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg  
355 360 365

Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val  
370 375 380

Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln  
385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile  
405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg  
420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn  
435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu  
450 455 460

Pro Val Phe Asn Val Thr Gly Gln Ser Glu Asn Lys Thr Asn Leu Lys  
465 470 475 480

20557A US Sequence Listing as filed

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp  
485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr  
500 505 510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln  
515 520 525

Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp  
530 535 540

Ala Glu Leu Glu Asn Glu Ile Lys Val Glu Ile Arg Asn Lys Met Ile  
545 550 555 560

Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln  
565 570 575

Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro  
580 585 590

Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser  
595 600 605

Phe Tyr Tyr Ile Lys Ala Lys Leu Glu Glu Thr Ile Thr Gln Ala Arg  
610 615 620

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Tyr Ser Glu Thr Leu Lys Pro Asp Asn Phe Glu Glu Ser Gly Tyr Thr  
625 630 635 640

Phe Ile Ala Pro Arg Glu Tyr Cys Asn Asp Leu Lys Pro Ser Asp Asn  
645 650 655

Asn Thr Glu Phe Leu Leu Asn Phe Asn Glu Phe Ile Asp Arg Lys Thr  
660 665 670

Pro Asn Asn Pro Ser Cys Asn Thr Asp Leu Ile Asn Arg Ile Leu Leu  
675 680 685

Asp Ala Gly Phe Thr Asn Glu Leu Val Gln Asn Tyr Trp Ser Lys Gln  
690 695 700

Lys Asn Ile Lys Gly Val Lys Ala Arg Phe Val Val Thr Asp Gly Gly  
705 710 715 720

Ile Thr Arg Val Tyr Pro Lys Glu Ala Gly Glu Asn Trp Gln Glu Asn  
725 730 735

20557A US Sequence Listing as filed

Pro Glu Thr Tyr Glu Asp Ser Phe Tyr Lys Arg Ser Leu Asp Asn Asp  
740 745 750

Asn Tyr Val Phe Thr Ala Pro Tyr Phe Asn Lys Ser Gly Pro Gly Ala  
755 760 765

Tyr Glu Ser Gly Ile Met Val Ser Lys Ala Val Glu Leu Tyr Ile Gln  
770 775 780

Gly Lys Leu Leu Lys Pro Ala Val Val Gly Ile Lys Ile Asp Val Asn  
785 790 795 800

Ser Trp Ile Glu Asn Phe Thr Lys Thr Ser Ile Arg Asp Pro Cys Ala  
805 810 815

Gly Pro Val Cys Asp Cys Lys Arg Asn Ser Asp Val Met Asp Cys Val  
820 825 830

Ile Leu Asp Asp Gly Gly Phe Leu Leu Met Ala Asn His Asp Asp Tyr  
835 840 845

Thr Asn Gln Ile Gly Arg Phe Phe Gly Glu Ile Asp Pro Ser Met Met  
850 855 860

Arg His Leu Val Asn Ile Ser Leu Tyr Ala Phe Asn Lys Ser Tyr Asp  
865 870 875 880

Tyr Gln Ser Val Cys Asp Pro Gly Ala Ala Pro Lys Gln Gly Ala Gly  
885 890 895

His Arg Ser Ala Tyr Val Pro Ser Ile Ala Asp Ile Leu Gln Ile Gly  
900 905 910

Trp Trp Ala Thr Ala Ala Ala Trp Ser Ile Leu Gln Gln Leu Leu Leu  
915 920 925

Ser Leu Thr Phe Pro Arg Leu Leu Glu Ala Val Glu Met Glu Glu Asp  
930 935 940

Asp Phe Thr Ala Ser Leu Ser Lys Gln Ser Cys Ile Thr Glu Gln Thr  
945 950 955 960

Gln Tyr Phe Phe Lys Asn Asp Thr Lys Ser Phe Ser Gly Leu Leu Asp  
965 970 975

Cys Gly Asn Cys Ser Arg Ile Phe His Val Glu Lys Leu Met Asn Thr  
980 985 990

20557A US Sequence Listing as filed

Asn Leu Val Phe Ile Met Val Glu Ser Lys Gly Thr Cys Pro Cys Asp  
995 1000 1005

Thr Arg Leu Leu Met Gln Ala Glu Gln Thr Ser Asp Gly Pro Asp  
1010 1015 1020

Pro Cys Asp Met Val Lys Gln Pro Arg Tyr Arg Lys Gly Pro Asp  
1025 1030 1035

Val Cys Phe Asp Asn Asn Val Leu Glu Asp Tyr Thr Asp Cys Gly  
1040 1045 1050

Gly Val Ser Gly Leu Asn Pro Ser Leu Trp Ser Ile Phe Gly Leu  
1055 1060 1065

Gln Phe Ile Leu Leu Trp Leu Val Ser Gly Ser Arg His Tyr Leu  
1070 1075 1080

Leu

<210> 30  
<211> 1091  
<212> PRT  
<213> Rattus norvegicus

<400> 30

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser  
1 5 10 15

Trp Leu Ile Gly Pro Ser Ser Glu Glu Pro Phe Pro Ser Pro Val Thr  
20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala  
35 40 45

Lys Thr Ala Ser Gly Val Thr Gln Leu Ala Asp Ile Tyr Glu Lys Tyr  
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
85 90 95

Leu Val Arg Leu Ala Met Glu Ala Glu Lys Val Gln Ala Ala His Gln  
100 105 110

20557A US Sequence Listing as filed

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
115 120 125

Asp Asp Leu Asp Pro Glu Arg Asn Glu Ser Glu Ser Gly Ser Gln Arg  
130 135 140

Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser  
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
180 185 190

Phe Lys Arg Asn Arg Asp Glu Asp Pro Thr Leu Leu Trp Gln Val Phe  
195 200 205

Ala Ala Asp Arg Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val Asp  
210 215 220

Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu Tyr Asp Val Arg Arg Arg  
225 230 235 240

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Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile Leu  
245 250 255 -----

Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile Arg  
260 265 270

Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe Val  
275 280 285

Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe Gln  
290 295 300

His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp Ala  
305 310 315 320

Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly Phe  
325 330 335

Thr Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala Asn  
340 345 350

Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg Ala  
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20557A US Sequence Listing as filed  
355            360            365

Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val Phe  
370                375                380

Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln Trp  
385                390                395                400

Met Ala Cys Glu Asn Lys Gly Tyr Tyr Glu Ile Pro Ser Ile Gly  
405                410                415

Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg Pro  
420                425                430

Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn Val  
435                440                445

Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu Pro  
450                455                460

Val Phe Asn Val Thr Gly Gln Ser Glu Asn Lys Thr Asn Leu Lys Asn  
465                470                475                480

Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp Ile  
485                490                495

Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr Phe  
500                505                510

Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln Pro  
515                520                525

Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp Ala  
530                535                540

Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile Asp  
545                550                555                560

Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln Asp  
565                570                575

Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro Val  
580                585                590

Asn Gly Thr Asp Tyr Arg Tyr Leu Ala Leu Val Leu Pro Thr Tyr Ser  
595                600                605

20557A US Sequence Listing as filed

Phe Tyr Tyr Ile Lys Ala Lys Ile Glu Glu Thr Ile Thr Gln Ala Arg  
610 615 620

Ser Lys Lys Gly Lys Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn  
625 630 635 640

Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Glu Tyr Cys Asn  
645 650 655

Asp Leu Lys Pro Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn  
660 665 670

Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp  
675 680 685

Leu Ile Asn Arg Ile Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val  
690 695 700

Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg  
705 710 715 720

Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala  
725 730 735

Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr  
740 745 750

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Lys Arg Ser Leu Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe  
755 760 765

Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys  
770 775 780

Ala Val Glu Leu Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val  
785 790 795 800

Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr  
805 810 815

Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn  
820 825 830

Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu  
835 840 845

Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly  
850 855 860

20557A US Sequence Listing as filed

Glu Ile Asp Pro Arg Met Met Arg His Leu Val Asn Ile Ser Leu Tyr  
865 870 875 880

Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Asp Pro Gly Ala  
885 890 895

Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile  
900 905 910

Thr Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala Ala Trp Ser  
915 920 925

Ile Leu Gln Gln Leu Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu  
930 935 940

Ala Val Glu Met Glu Glu Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln  
945 950 955 960

Ser Cys Ile Thr Glu Gln Thr Tyr Phe Phe Lys Asn Asp Thr Lys  
965 970 975

Ser Phe Ser Gly Leu Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His  
980 985 990

Val Glu Lys Leu Met Asn Thr Asn Leu Val Phe Ile Met Val Glu Ser  
995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Met Gln Ala Glu  
1010 1015 1020

Gln Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val Lys Gln Pro  
1025 1030 1035

Arg Tyr Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Val Leu  
1040 1045 1050

Glu Asp Tyr Thr Asp Cys Gly Gly Val Ser Gly Leu Asn Pro Ser  
1055 1060 1065

Leu Trp Ser Ile Phe Gly Leu Gln Phe Ile Leu Leu Trp Leu Val  
1070 1075 1080

Ser Gly Ser Arg His Tyr Leu Trp  
1085 1090

<210> 31  
<211> 1091

20557A US Sequence Listing as filed

<212> PRT  
<213> Sus scrofa

<400> 31

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser  
1 5 10 15

Leu Leu Ile Gly Pro Ser Ser Gln Glu Pro Phe Pro Ser Ala Val Thr  
20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala  
35 40 45

Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr  
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu  
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala  
85 90 95

Leu Val Arg Leu Ala Leu Glu Ala Glu Lys Val Gln Ala Ala His Gln  
100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys  
115 120 125

Asp Asp Leu Asp Pro Glu Lys Asn Asp Ser Glu Pro Gly Ser Gln Arg  
130 135 140

Ile Lys Pro Val Phe Ile Asp Asp Ala Asn Phe Gly Arg Gln Ile Ser  
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser  
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val  
180 185 190

Phe Lys Lys Asn Arg Glu Glu Asp Pro Ser Leu Leu Trp Gln Val Phe  
195 200 205

Gly Ser Ala Thr Gly Leu Ala Arg Tyr Tyr Pro Ala Ser Pro Trp Val  
210 215 220

Asp Asn Ser Arg Thr Pro Asn Lys Ile Asp Leu Tyr Asp Val Arg Arg  
225 230 235 240

20557A US Sequence Listing as filed

Arg Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile  
245 250 255

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile  
260 265 270

Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe  
275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe  
290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp  
305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly  
325 330 335

Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala  
340 345 350

Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg  
355 360 365

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Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val  
370 375 380 -----

Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln  
385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile  
405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg  
420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn  
435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu  
450 455 460

Pro Val Phe Asn Ile Thr Gly Gln Asn Glu Asn Lys Thr Asn Leu Lys  
465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp  
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20557A US Sequence Listing as filed  
485                          490                          495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr  
500                          505                          510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln  
515                          520                          525

Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp  
530                          535                          540

Ala Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile  
545                          550                          555                          560

Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln  
565                          570                          575

Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro  
580                          585                          590

Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser  
595                          600                          605

Phe Tyr Tyr Ile Lys Ala Lys Ile Glu Glu Thr Ile Thr Gln Ala Arg  
610                          615                          620

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Ser Lys Lys Gly Lys Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn  
625                          630                          635                          640

Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Asp Tyr Cys Asn  
645                          650                          655

Asp Leu Lys Ile Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn  
660                          665                          670

Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp  
675                          680                          685

Leu Ile Asn Arg Val Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val  
690                          695                          700

Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg  
705                          710                          715                          720

Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala  
725                          730                          735

20557A US Sequence Listing as filed

Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr  
740 745 750 755 760 765

Lys Arg Ser Leu Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe  
770 775 780

Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys  
785 790 795 800

Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr  
805 810 815

Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn  
820 825 830

Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu  
835 840 845

Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly  
850 855 860

Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr  
865 870 875 880

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Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala  
885 890 895

Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile  
900 905 910

Ala Asp Ile Leu His Ile Gly Trp Trp Ala Thr Ala Ala Trp Ser  
915 920 925

Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu  
930 935 940

Ala Val Glu Met Glu Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln  
945 950 955 960

Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys  
965 970 975

Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His  
980 985 990

20557A US Sequence Listing as filed

Val Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser  
995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu  
1010 1015 1020

Gln Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val Lys Gln Pro  
1025 1030 1035

Arg Tyr Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Ala Leu  
1040 1045 1050

Glu Asp Tyr Thr Asp Cys Gly Gly Val Ser Gly Leu Asn Pro Ser  
1055 1060 1065

Leu Trp Ser Ile Phe Gly Ile Gln Cys Val Leu Leu Trp Leu Leu  
1070 1075 1080

Ser Gly Ser Arg His Tyr Gln Leu  
1085 1090